

A MANUFACTURER'S CONTINUING DUTY TO IMPROVE PRODUCT

Noel v. United Aircraft Corp., 342 F.2d 232 (3d Cir. 1965)

A Lockheed Constellation airliner, owned and operated by Linea Aeropostal Venezuela (LAV), departed from New York on June 20, 1956, bound for Marquetia, Venezuela, with libellant's husband on board. About two hours after departure it crashed into the ocean, killing all passengers and crew. In libellant's admiralty suit under the Death on the High Seas Act,¹ the district court found that the inability of a propeller feathering mechanism, manufactured by respondent to control the number two engine's overspeed,² had caused the crash.³

The district court also found that respondent had been aware of malfunctions in its feathering mechanisms as early as 1950 and admittedly had known by 1954 that an alternative device was needed. Furthermore, by January, 1956 respondent not only had developed a safety device called Pitch Lock but also had put it in use on Douglas aircraft. The court concluded that respondent was negligent in that it could and should have produced Pitch Lock for use on Lockheed Constellations prior to this accident.⁴ The court of appeals affirmed but, in a supplemental opinion denying rehearing, placed liability on three grounds: (1) defective design,⁵ (2) breach

¹ 41 Stat. 537 (1920), 46 U.S.C. §§ 761-68 (1964).

² The appellate court explained overspeed and feathering as follows:

Overspeed is a condition in which the propeller rotates at a rate greater than its maximum capacity. Feathering refers to the operation whereby the blades of the propeller are turned on their own axis so that they parallel the airstream in order to limit rotation once the propeller has been turned off. If overspeed is not brought under control either by feathering or some other way it is considered highly dangerous because of the strong likelihood of disintegration of the engine and its component parts. . . .

342 F.2d 232, 234 (3d Cir. 1965).

³ *Noel v. United Aircraft Corp.*, 219 F. Supp. 556, 566 (D. Del. 1963). The lower court found that as the plane attempted to return to New York the #2 propeller decoupled, separated from the engine and slashed into a fuselage fuel tank shortly after the pilot began dumping excess fuel in preparation for landing. The court concluded that flames from the overheated engine ignited the dumping fuel and the ruptured belly tank exploded, setting off the conflagration which caused the crash. *Ibid.*

⁴ *Id.* at 572. A motion to insert a cause of action on implied warranty had been denied earlier. 204 F. Supp. 929, 940 (D. Del. 1962). In circumstances where the Death on the High Seas Act is applicable, the courts are divided on the question whether, in the absence of privity, a suit in admiralty may be maintained against the manufacturer on implied warranty to the passenger. *Billyou*, Air Law 163-64 & n.13 (2d ed. 1964); 37 Tul. L. Rev. 141 (1962).

⁵ Judge Freedman objected in dissent to this ground of liability:

[T]he trial judge's opinion itself recognizes that airplanes and their parts are still not perfect from all defects. The question is not whether there was a defect in design and manufacture which caused the accident but whether such defect existed at the time of the sale, and was one which fell below the standard of due

of a duty to warn LAV after acquiring knowledge of prior failures, and (3) breach of a duty to develop and make Pitch Lock available, based on the continuing advisory relationship⁶ extant between the manufacturer and the airline before the crash.⁷

Liability for negligent design and failure to warn are well established principles, but liability predicated upon a manufacturer's failure to improve his product is a novel doctrine which may have far-reaching implications. For this reason the present analysis is concerned with two questions: whether an extension of negligence principles was necessary for the imposition of liability and, if so, whether the manufacturer's duty to improve his product has a sound basis and any discernible limitations.

A manufacturer's liability to those foreseeably endangered by his negligently manufactured product dates from the landmark case, *Mac Pherson v. Buick Motor Co.*⁸ The applicability of the *Mac Pherson* principle to persons not in privity is well settled in aviation⁹ and admiralty¹⁰ law. As a general

care under the circumstances and constituted negligence. Any other view would absorb negligence in the doctrine of absolute liability, which does not now require consideration as a preferable alternative.

342 F.2d at 243. But, since the propeller governor was delivered to LAV on July 8, 1954, and the propeller on July 15, 1955, Brief for Libellants, p. 6, *Noel* is not clearly a negligent sale case, for the facts do not indicate that Pitch Lock was or should have been in service on any aircraft at that time.

⁶ Libellants claimed United supplied maintenance and service manuals with its propellers which were supplemented by service bulletins when warranted. In addition United maintained fifty field service representatives throughout the world to advise and assist airlines. These representatives reported back difficulties encountered by airlines in using United's propellers, and United advised the airlines how to prevent the trouble in the future. Brief for Libellants, p. 10-11.

⁷ 342 F.2d 232, 242 (3d Cir. 1965).

⁸ 217 N.Y. 382, 111 N.E. 1050 (1916). The opinion states in part:

If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. . . . If to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is under a duty to make it carefully. . . . There must be knowledge of a danger, not merely possible, but probable. . . . There must also be knowledge that in the usual course of events the danger will be shared by others than the buyer. . . . We are dealing now with the liability of the manufacturer of the finished product, who puts it on the market to be used without inspection by his customer.

Id. at 389-90, 111 N.E. at 1053.

⁹ *Carter Carburetor Corp. v. Riley*, 186 F.2d 148 (8th Cir. 1951) (Manufacturer of airplane carburetor) (applying Minn. law), *overruled on other grounds*, *Coca Cola Bottling Co. v. Hubbard*, 203 F.2d 859 (8th Cir. 1953); *King v. Douglas Aircraft Co.*, 159 So. 2d 108, 1963 U.S. Av. 141 (Fla. Dist. Ct. App. 1963); *Livesly v. Continental Motors Corp.*, 331 Mich. 434, 49 N.W.2d 365 (1951) (manufacturer of airplane engine); *Maynard v. Stinson Aircraft Corp.*, 1940 U.S. Av. 71, 1 Av. Cas. 698 (Mich. Cir. Ct. 1937); *Breen v. Conn*, 30 Ohio L. Abs. 483, 1938 U.S. Av. 160, 1 Av. Cas. 772 (Ct. App.

proposition then, respondent, as a manufacturer,¹¹ was under a duty to exercise reasonable care commensurate with the risk of harm foreseeably created by his product if defective—that degree of care which would be exercised by an ordinary, prudent propeller manufacturer acting under the conditions of respondent's business.¹² Since the risk of injury or loss of life was high, respondent was bound to observe a correspondingly high degree of care¹³ in design,¹⁴ construction,¹⁵ inspection¹⁶ and testing¹⁷ of the propeller system. To determine if this duty has been discharged, courts have applied general negligence principles:¹⁸ "a balancing of the likelihood of harm, and the gravity of harm if it happens, against the burden of the precaution which would be effective to avoid the harm."¹⁹

I. LIABILITY FOR NEGLIGENT DESIGN

In negligent design cases against established manufacturers of widely used products, the courts have been hesitant to impose liability, partly out of reluctance to let juries of lay persons pass judgment on the work of experts and partly from the realization that a judgment against the manufacturer would open the door to many additional claims and require extensive remodeling of a product or its removal from the market.²⁰ But these technical and economic considerations reflect only a few of the factors which

1938) (dictum) (principle did not apply to secondhand plane); 16 J. Air L. & Com. 240, 243 (1949). See Restatement (Second), Torts §§ 395, 398 (1965); *Smith v. Piper Aircraft Corp.*, 18 F.R.D. 169, 171 (M.D. Pa. 1955), which cites the Restatement as the law of Pennsylvania and Georgia.

¹⁰ *Sieracki v. Seas Shipping Co.*, 149 F.2d 98, 99 (3d Cir. 1945), *aff'd with opinion*, 328 U.S. 85 (1946).

¹¹ *Vrooman v. Beech Aircraft Corp.*, 183 F.2d 479 (10th Cir. 1950) (applying Kansas law); *Johnson v. Cadillac Motor Car Co.*, 261 Fed. 878 (2d Cir. 1919); *Breen v. Conn.*, *supra* note 9 (holding the rule applicable to both airplane and automobile manufacturers). See Annot., 78 A.L.R.2d 473, 476 (1961).

¹² *Northwestern Airlines, Inc. v. Glenn L. Martin Co.*, 224 F.2d 120 (6th Cir. 1955), *cert. denied*, 350 U.S. 937 (1956); *Maynard v. Stinson Aircraft Corp.*, *supra* note 9, at 71-72, 1 Av. Cas. at 699; Annot., 78 A.L.R.2d 473, 477 (1961).

¹³ *Maynard v. Stinson Aircraft Corp.*, *supra* note 9. *Cf.* *Boeing Aircraft Co. v. Brown*, 291 F.2d 310 (9th Cir. 1961) (Calif. law).

¹⁴ *Maynard v. Stinson Aircraft Corp.*, *supra* note 9.

¹⁵ *Hudson v. Moonier*, 94 F.2d 132 (8th Cir.), *rev'd on other grounds*, 304 U.S. 397 (1938); *Monaco v. Hall-Ehlert GMC Sales, Inc.*, 3 App. Div. 2d 90, 158 N.Y.S.2d 444 (1956).

¹⁶ *Johnson v. Cadillac Motor Car Co.*, *supra* note 11; *Breen v. Conn.*, *supra* note 9.

¹⁷ Where testing is reasonably necessary to secure production of a safe product. *Zesch v. Abrasive Co. of Philadelphia*, 353 Mo. 558, 567, 183 S.W.2d 140, 145 (1944); Annot., 78 A.L.R.2d 473, 478 (1961). See 2 Harper & James, Torts § 28.4, at 1541 (1956).

¹⁸ Noel, "Manufacturer's Negligence of Design or Directions for Use of a Product," 71 Yale L.J. 816, 818 (1962).

¹⁹ *Ibid.*, quoting 2 Harper & James, Torts § 28.4, at 1542 (1956). See Restatement (Second), Torts § 291-93 (1965).

²⁰ Noel, *supra* note 18, at 816.

are weighed by the courts when considering whether a particular product design subjected the users to an unreasonable risk of foreseeable harm. For this analysis, only the factors relevant to a determination of unreasonableness are important. These are set out by Prosser as follows:

It is fundamental that the standard of conduct which is the basis of the law of negligence is determined by balancing the risk, in the light of the social value of the interest threatened, and the probability and extent of the harm, against the value of the interest which the actor is seeking to protect, and the expedience of the course pursued.²¹

If in *Noel* these considerations were to be applied to the facts existing at the time of the accident, the court was correct in finding defective design an independent ground of negligence. Respondent *knew* its propeller system had a long history of malfunctioning and that an aircraft with its passengers could be destroyed by an uncontrollably spinning propeller. Thus respondent could foresee a substantial risk of harm of grave proportions. In addition, respondent possessed the knowledge and skill to produce a device that would reduce the risk. Consequently, the burden of making the safety device available was far less than the probability and gravity of the injury likely to occur.

However, according to *Maynard v. Stinson Aircraft Corp.*²², the facts relevant to a determination of negligent design are *not* those which existed at the time of the accident but those which existed *at the time respondent designed its propeller system*. If at that time respondent designed its product in accordance with the best knowledge it possessed as an expert,²³ its only alternative to producing the propeller system was to go out of business. This being the case, respondent should have had the benefit of "the state of the art defense,"²⁴ which makes the test for unreasonableness a question of policy: whether the utility of the propeller system outweighed the high degree of risk.²⁵ Presumably it did from the time of design until January, 1956, the advent of Pitch Lock. At least this seemed to be the attitude of

²¹ Prosser, Torts 152 (3d ed. 1964).

²² *Supra* note 9, at 72, 1 Av. Cas. at 699.

²³ A reading of both opinions indicates this was assumed to be true. Libellants either failed to show that a safer design was feasible at the time respondent designed its propeller system or did not try to because they brought suit on the continuing duty theory.

²⁴ *Maynard v. Stinson Aircraft Corp.*, *supra* note 9, at 76, 1 Av. Cas. at 701; 1 Kreindler, Aviation Accident Law § 7.02[6][d] (1963) which states, "To say that a manufacturer can only be held to the state of the art existing at the time of its activity, is simply another way of saying that a manufacturer should not be [adjudged] negligent." See *Northwestern Airlines, Inc. v. Glenn L. Martin Co.*, *supra* note 12, at 124 (applying Ohio law in a suit brought by airline), where the court refused to find the Martin Company negligent as a matter of law when it knew of danger in its wing design but contended that, according to the state of the art, nothing could have been done to alleviate the danger, metal fatigue.

²⁵ Restatement (Second), Torts § 291 (1965).

the district court when it implied that had respondent been expending a reasonable amount of its resources and manpower on improvement, it would have had a defense,²⁶ and the appellate court said nothing to negate the implication.

After such a conclusion respondent could have been held liable for defective design only upon the theory that the industry should bear the burden of distributing the risk as a cost of doing business or upon the theory of implied warranty. But, these are theories of absolute liability and absolute liability one shade removed rather than liability for negligence. Therefore, in spite of the fact that a finding of defective design was essential for the warning and continuing duty issues, defective design was not properly an independent ground of negligence; the risk created by the design was not unreasonable at the relevant time.

II. LIABILITY FOR FAILURE TO WARN

It is generally said that a manufacturer or seller of chattels which to his actual or constructive knowledge involve a danger to users has a duty to give warning of the danger or the facts likely to make them so.²⁷ This duty exists with respect to products which the courts have characterized as "defectively made"²⁸ or "dangerous though not defectively made,"²⁹ but, if the danger is obvious (not the case in *Noel*), a warning is generally not required.³⁰ In contrast to the duty to exercise proper care in designing a product, dischargeable at the time of design, a duty to warn may sometimes arise after the time of sale when the manufacturer acquires knowledge of the danger.³¹ In all cases the duty is to warn of those dangers which the manufacturer should reasonably foresee.³² When the warning can accompany the product, the purpose is to apprise those persons using it of dangers not reasonably to be anticipated in its use.³³ But, where the warning cannot accompany the product, the purpose is to permit the purchaser to take precautions against injury to third persons by transmitting the warning or by repairing or replacing the product.³⁴ Thus, the legal adequacy of a

²⁶ *Noel v. United Aircraft Corp.*, *supra* note 3, at 572-73.

²⁷ See Restatement (Second), Torts § 388 (1965); Annot., 76 A.L.R.2d 9, 16 (1961).

²⁸ *Comstock v. General Motors Corp.*, 358 Mich. 163, 99 N.W.2d 627 (1959).

²⁹ *Tomao v. A. P. De Sanno & Son, Inc.*, 209 F.2d 544 (3d Cir. 1954). See *Marker v. Universal Oil Prods. Co.*, 250 F.2d 603 (10th Cir. 1957).

³⁰ Annot., 76 A.L.R.2d 9, 28 & n.18 (1961) (citing cases).

³¹ *Comstock v. General Motors Corp.*, *supra* note 28.

³² *Dillard & Hart*, "Products Liability: Directions for Use and Duty to Warn," 41 Va. L. Rev. 145, 146, 156-60 (1955). See Annot., 76 A.L.R.2d 9, 16-21 (1961); Annot., 86 A.L.R. 947 (1933).

³³ See *McClanahan v. California Spray-Chemical Corp.*, 194 Va. 842, 75 S.E.2d 712 (1953) (purpose of special poison labeling statute); Restatement (Second), Torts § 388, comment n, at 310.

³⁴ See Restatement (Second), Torts § 388 at 307-10. *Burns v. Pennsylvania Rubber & Supply Co.*, 117 Ohio App. 12, 189 N.E.2d 645 (1961).

warning depends on whether the policy supporting the requirement is served.

In deciding whether a warning is required and whether a warning would discharge the manufacturer of liability, the courts have looked at the characteristics³⁵ of the product and the likelihood that a warning was communicated to the user.³⁶ When the characteristics creating the danger were inherent³⁷ but the danger was avoidable by proper use of the product, the courts have relieved the manufacturers who gave adequate warning from liability. On the other hand, when a defect in the product³⁸ created the

³⁵ See, e.g., *Prashker v. Beech Aircraft Corp.*, 258 F.2d 602 (3d Cir.), *cert. denied*, 358 U.S. 910 (1958), in which the court said, "Nathan Prashker knew . . . that his craft was a faster, aerodynamically 'cleaner' airplane . . . [than his others.] A fast, 'clean' airplane is more difficult to fly, both on visual flight rules and on instruments. . . ." *Id.* at 605. The court also asserted that the duty to warn was discharged by warnings to avoid instrument flight conditions. *Id.* at 607. In *Comstock v. General Motors Corp.*, *supra* note 28, the court claimed, "A modern automobile equipped with brakes which fail without notice is as dangerous as a loaded gun." *Id.* at 173, 99 N.W.2d at 632. General Motors was held liable for not warning the owner. In *Saporito v. Purex Corp.*, 40 Cal. 2d 608, 255 P.2d 7 (1953), the court found: "There was evidence that Purex is an unstable chemical solution which decomposes gradually, forms a gas and, when bottled, creates gas pressure." *Id.* at 610, 255 P.2d at 8. The plaintiff, who had not been warned, was injured when the bottle exploded, and defendant was held liable. In *Thomas v. Jerominek*, 8 Misc. 2d 517, 170 N.Y.S.2d 388 (Sup. Ct. 1957), the complaint charged that the right rear door of the automobile was hinged at the rear side of the door rather than at the front side to a door post in the middle of the auto. The court concluded that since plaintiff had complained of nothing that could be called a latent defect, the complaint would be dismissed. And, in *Dempsey v. Virginia Dare Stores*, 239 Mo. App. 355, 186 S.W.2d 217 (1945), the court concluded, "Persons of ordinary intelligence . . . know that openly woven, fluffy and 'fuzzy wuzzy' materials will ignite and burn more readily than ordinary cloth." *Id.* at 359, 186 S.W.2d at 220. Plaintiff's "fuzzy wuzzy" dress was ignited by a cigarette she had been smoking, and defendant was held not liable for failure to warn.

³⁶ See, e.g., *Foster v. Ford Motor Co.*, 139 Wash. 341, 246 Pac. 945 (1926), in which the court held that a tractor manufacturer who fully explained the method of operation to purchasers was not required to notify their servants because the "very appearance of a complicated piece of machinery such as this is in itself a sufficient warning to one who desires to use it that he should acquaint himself with its power and possibilities." *Id.* at 347-48, 246 Pac. at 947. In *Tomao v. A. P. De Sanno & Co.*, *supra* note 29, the court said, "its peculiar or special purpose was not at all evident on its face and was not otherwise brought home to those who might have occasion to use it. Without indicating to third persons [by information on the label] the special nature of the [grinding] wheel, we think defendant has not brought itself within the 'special purpose' exception." *Id.* at 547. And, in *Maize v. Atlantic Refining Co.*, 352 Pa. 51, 41 A.2d 850 (1945), the court found that the warning on the can of cleaning fluid was not prominent enough to communicate the danger to the housewife.

³⁷ "An article may be . . . inherently dangerous where the danger lies in the nature or character of the article. . . ." 46 Am. Jur. Sales § 814, at 939 (1943). See Annot., 164 A.L.R. 371, 377-80 (1946).

³⁸ During the emergent period of products liability law such products were sometimes said to be "imminently dangerous." See Am. Jur. Sales § 815 (1943); Annot., 164

danger and the danger could not be avoided by proper use of the product, the courts have spoken of a duty to warn,³⁹ but rarely, if ever, have they found that a warning could relieve a manufacturer of liability.⁴⁰

A.L.R. 375 (1946). This term has fallen into disuse because of confusion with "inherently dangerous."

³⁹ In *Blitzstein v. Ford Motor Co.*, 288 F.2d 738 (5th Cir. 1961), plaintiff was injured by an explosion in the unventilated trunk of an English Ford. In regard to this case Professor Dix W. Noel remarks:

The opinion speaks of a duty to warn, and perhaps the distributor would have been protected by an adequate warning of the unsafe design; but it would seem that the manufacturer of the car would be under a duty definitely to provide the vents, if they were found by the jury to be needed for safe construction. It is fantastic to suppose that even with a warning users of the car would check the trunk for fumes before opening it with a lighted cigarette in hand or before turning on the ignition.

Noel, *supra* note 18, at 824.

⁴⁰ None of the cases cited in Annot., 76 A.L.R.2d 9 (1961) and Annot., 86 A.L.R. 947 (1963) have so found. In many cases a supplier of defective chattels or one who has negligently supplied the wrong chattel has not been relieved by a warning to the person supplied. *Kentucky Independent Oil Co. v. Schnitzler*, 208 Ky. 507, 271 S.W. 570 (1925); *Frazier v. Ayres*, 20 So. 2d 754 (La. Ct. App. 1945); *Mitchell v. Lonergan*, 285 Mass. 266, 189 N.E. 39 (1934) (driver of car acquired knowledge of defective brakes by his own test); *Ferraro v. Taylor*, 197 Minn. 5, 265 N.W. 829 (1936) (also discovery instead of warning); *Stout v. Madden*, 208 Ore. 294, 300 P.2d 461 (1956) (discovery, not warning, but court said warning could not relieve of liability); *Trusty v. Patterson*, 299 Pa. 469, 149 Atl. 717 (1930) (discovery, not warning). See Restatement (Second), Torts § 389 (1965). *Cf. Waters-Pierce Oil Co. v. Deselms*, 212 U.S. 159 (1909) (no warning); *Clement v. Crosby & Co.*, 148 Mich. 293, 111 N.W. 745 (1907) (no warning); 1 Kreindler, *Aviation Accident Law* § 7.02[3][a] (1963).

The distinction between products safe, if properly used, and products defective for the use intended can best be clarified by specific examples. For instance, tractors tend to turn over backwards when improperly used. Thus, the courts have required that warning and information be given of such characteristic. But, since a full explanation of such danger cannot be put on the machine, a complete explanation given in the manual which accompanies the tractor will serve the purpose underlying the warning requirement and shift liability to the purchaser for injury to third persons. *Foster v. Ford Motor Co.*, *supra* note 36; *Ford Motor Co. v. Wolber*, 32 F.2d 18 (7th Cir.), *cert. denied*, 280 U.S. 565 (1929). *Accord*, *Holmes v. Ashford*, [1950] 2 All E.R. 76 (Ct. App.). It is implied in 1 Kreindler, *Aviation Accident Law* § 7.02[4] (1963), that this principle is applicable in the aviation field since the author states that the manufacturer is liable for failure to give information; therefore, he must be discharged if he does.

The case is different with cleaning fluids. Though carbon tetrachloride is safe for the purpose intended, the fumes may cause death. Consequently, a warning and information must be put on the container to call attention to the dangers and prescribe procedures for the efficient use of the product and avoidance of the danger, James, "Products Liability," 34 Texas L. Rev. 44, 55 n.89 (1955), by the purchaser or third persons. But, when full information is given, the policy underlying the requirement has been served. *McClaren v. G. S. Robins & Co.*, 349 Mo. 653, 162 S.W.2d 856 (1942).

If, however, the manufacturer makes a defective product, the question is really not one of warning. An automobile placed on the market with defective brakes is dangerous

Obviously, the propeller feathering mechanism which caused the injury in *Noel* was defective. But, assuming that respondent's "state of the art defense" made the design nonnegligent, no purpose would have been served by a mere warning to LAV, for, presumably in the circumstances of this case, the airline would have had the same defense as respondent.⁴¹ A warning would have shifted a non-existent liability.

The fact is there were no feasible alternatives which LAV could have used to avoid the risk. Respondent controlled about ninety per cent of the propeller industry, and the opinions of both courts assume that LAV could not have obtained an alternative device from another source.⁴² Another device called the integral oil system had been used to some degree by the military⁴³ but had been rejected for commercial airlines as too expensive, too heavy, too complicated and poorly located; it was not a workable solution.⁴⁴

Under these circumstances the duty to warn cannot stand as an independent ground of negligence in *Noel*. Because respondent had not done all he could be reasonably asked to do, the duty to warn, if imposed at all, must be a corollary of another duty. The risk created by respondent's product was excusable up to January, 1956. As the case was decided, however, respondent was under a continuing duty prior to that date to develop a safer product. If a warning was properly required, it must have been a corollary to respondent's duty to develop and make available an improvement for his product. Under this analysis, if respondent had developed and made Pitch

not only to the purchaser or user but also to other automobile owners and pedestrians. *Comstock v. General Motors Corp.*, *supra* note 28, at 176, 99 N.W.2d at 634. In this situation a warning might reach the owner and other users, but the policy underlying the duty to warn cannot be fully served; it is impossible for the manufacturer to put a warning within reach of all persons subjected to the risk. Consequently, the manufacturer should be required to do something more, for the real test of liability is whether the manufacturer has done all he reasonably could be asked to do to prevent the loss. See, e.g., *Ford Motor Co. v. Wagoner*, 183 Tenn. 392, 192 S.W.2d 840 (1946); *Comstock v. General Motors Corp.*, *supra* note 28. Cf. Restatement (Second), Torts § 447 (1965).

If the product is defective, generally, he has not done all he can by just giving a warning, at least where nothing can be reasonably done by the warned party about the defect. Professor Noel, *supra* note 18, asserts:

It would seem that where a safety device can be easily attached and will remedy a real danger, there should be a duty to take reasonable steps to supply the safety device even to those to whom the product already has been sold. There is no doubt that such a duty exists when it develops that the original design is clearly defective.

Id. at 826.

⁴¹ *Galer v. Wings Ltd.*, 47 Man. 281 (1938).

⁴² The courts did not discuss this point explicitly, but the district court's reference to respondent's dominant position in the industry indicates it assumed there was no other source. 219 F. Supp. at 572-73.

⁴³ This system was used during or shortly after World War II on some military aircraft, 219 F. Supp. at 570; 342 F.2d at 237, but it was not in use in 1956, the time of the accident, Brief for Respondent, p. 34 n.27.

⁴⁴ *Noel v. United Aircraft Corp.*, *supra* note 7, at 237, *supra* note 3, at 570.

Lock available to LAV prior to the accident, a warning and proffer of the device would have been an efficient act. It would have been effective to discharge respondent of liability; by giving LAV a feasible alternative to the defective propeller system it was using, respondent would have done all he reasonably could be asked to do. Therefore, the court's treatment of the duty to warn as an independent ground of negligence should be regarded as erroneous.

III. LIABILITY FOR BREACH OF CONTINUING DUTY TO IMPROVE PRODUCT

As a general proposition of tort law, a continuing duty to develop and make available safety devices for products previously sold gives most manufacturers good cause to shudder. Thus, respondent poses important questions when he asks:

For instance, under the trial court's doctrine, is Ford required to develop and make available power brakes for the remaining model A's? Must every manufacturer stay in business to develop and make available improvements for products previously sold? Is a manufacturer required to purchase patent rights from others to develop and make available improvements on his own products already sold?

If a manufacturer is under a "continuing duty" to invent and make available improvements, at what price must these be made available?⁴⁵

Contrary to respondent's fears and trepidations, however, an analysis of traditional bases for the imposition of affirmative duties and of limitations implicit in the doctrine suggested by the court will show that the extension of negligence principles accomplished by *Noel* was a justifiable and manageable one.

By traditional doctrine, when a man acts he has a duty to exercise due care with regard to all persons who may foreseeably be injured thereby.⁴⁶ For instance, a man driving on a public highway must not cross the line so as to collide with another. But, generally, the individualistic philosophy of the common law, which viewed a requirement of beneficent action as an unwarranted limitation on personal freedom, has made the courts reluctant to require positive action.⁴⁷ Yet the law does require a person to take positive action for the protection of others if he is the dominant party to certain special relationships, such as carrier-passenger, employer-employee, invitor-invitee,

⁴⁵ Brief for Respondent, p. 34 n.27.

⁴⁶ 2 Harper & James, Torts § 18.6, at 1044 (1956). Historically, "the primary conception of a tortious act was an act done directly injurious to another's rights." Bohlen, *Studies in the Law of Torts* 37 (1926). The actor owed a duty to such person "*not to do that which may cause a personal injury to that other, or may injure his property.*" (Emphasis added.) *Le Lievre v. Gould*, [1893] 1 Q.B. 491, 497. For a similar present day definition see *Dempsey v. United States*, 176 F. Supp. 75, 81 (W.D. Ark. 1959). For a full definition of "negligence" see Seavey, *Cogitations on Torts* 25-26 (1954).

⁴⁷ 2 Harper & James, Torts § 18.6, at 1049 (1956); Note, 52 Col. L. Rev. 631, 632 (1952).

possibly parent-child and nurse-invalid, and parties who have induced reliance by promising to perform an act.⁴⁸ Likewise, if respondent, as a manufacturer of a propeller system which created a high degree of risk, was properly required to develop and make available improvements for its product, the courts must have felt that respondent's status in society as a manufacturer possessing special skill and knowledge put it in a special relationship with LAV's passengers.

As a matter of legal history, affirmative duties have been imposed on the dominant party in such relationships when he voluntarily entered upon the course of conduct involved for the purpose of making a profit⁴⁹ and when he had the power to control the property or the relationship.⁵⁰ The benefit accruing and the dependency fostered by his actions have justified such impositions. Although the listed elements are not found in every one of the previously named relationships, each is present to some degree in *Noel*. Respondent entered voluntarily into the business of manufacturing propeller systems for profit and sold one to LAV with the expectation that it would be used on passenger airliners, receiving an indirect monetary benefit from the passengers without whom neither LAV nor respondent could have engaged in business. Furthermore, by virtue of its status in the propeller industry, a position attended by almost exclusive possession of superior knowledge and skill in propeller system design, respondent enjoyed the type of dominance and control over the beneficial relationship that has resulted in the imposition of affirmative duties as aforementioned. Like a nurse's patient or a carrier's passenger, LAV and its passengers were dependent upon respondent for their safety.

Although the preceding discussion appears to place respondent within

⁴⁸ See 2 Harper & James, Torts § 18.6, at 1044-49 (1956); Restatement (Second), Torts § 323 (1965).

⁴⁹ Bohlen, *op. cit. supra* note 46, at 42-48. Concerning the benefit principle, Bohlen asserts:

Such obligations arise only when assumed, but they are not the creatures wholly of consent, they may be annexed to the performance of certain acts, the conduct of certain businesses, the use of property in certain ways; the performance of these acts, the entering into such business, and the use of the property is wholly *voluntary*, but if done, the duties follow as a matter resting wholly on the policy of law, that policy which protects the right of citizens from positive injury. Such duties therefore only arise when they are necessary to protect others from the consequences of acts, businesses, or uses of property beneficial to those who do them, engage in them, and use it. . . .

Id. at 62-63. (Emphasis added.) McNiece & Thornton, "Affirmative Duties in Tort," 58 Yale L.J. 1272, 1282 (1949), suggest that the benefit principle is the "binding thread" of those relationships which impose a duty of care. However, 2 Harper & James, Torts § 18.6, at 1049 n.22 (1956), suggests that this principle may be too narrow to cover all the relationships.

⁵⁰ See *De Vito v. United Air Lines, Inc.*, 98 F. Supp. 88 (E.D.N.Y. 1951); 1 Kreindler, Aviation Accident Law § 7.02[3][b] (1963). The element of control also exists in the parent-child and nurse-invalid relationships.

the broad policies justifying the imposition of affirmative duties, *Noel* represents an application of these policies without precedent in the decisions but definitely within their trend. Historically, the imposition of affirmative duties progressed from owners of business property⁵¹ to suppliers of chattels.⁵² But difficulties arose earlier when attempts were made to hold contractors and manufacturers liable to persons with whom they had not directly dealt. The holding in *Winterbottom v. Wright*,⁵³ that no duty of care was owed to persons not in privity with the contractor, was a limitation resulting from a misconception of the relationship between the duty imposed by law and the benefit accruing to the contractor. Protection was given only to the party conferring the benefit, whereas previously the benefit required did not have to come from the party protected. The same limitation was applied to manufacturer's liability.⁵⁴

This restriction, however, gradually eroded away. In imposing liability to third persons, the courts at first relied on a theory of deception, limiting liability to situations where the manufacturer knew, or should have known, of a defect which the intervening retailer did not discover.⁵⁵ Subsequently protection was extended to situations where the product was "inherently" or "imminently" dangerous.⁵⁶ Then in *Mac Pherson v. Buick Motor Co.*⁵⁷ a duty to prevent injury to persons not in privity, analogous to that imposed on suppliers of chattels, was imposed on manufacturers.⁵⁸ And, finally, in *Noel* the court took a further step.

A comparison of the affirmative duties imposed by *Mac Pherson* and *Noel* illustrates the precise extension of traditional negligence principles accomplished. From *Mac Pherson* a duty to inspect arises before sale, and its effective discharge requires that appropriate action be taken before sale. From *Noel* a duty to improve arises at the time the manufacturer learns of

⁵¹ In *Indermaur v. Dames*, L.R. 2 C.P. 311 (1867), the upper court held that a gasfitter who went to a sugar refinery for the purpose of inspecting a gas regulator was entitled to expect that the occupier "shall . . . use reasonable care to prevent damage from unusual danger which he knows or ought to know. . . ." *Id.* at 313. (Emphasis added.)

⁵² In *Elliott v. Hall*, 15 Q.B.D. 315 (1885), a colliery owner was held liable to third persons for failure to discover by inspection the defective conditions of trucks (coal cars) used in his business.

⁵³ 10 M. & W. 109, 152 Eng. Rep. 402 (Exch. 1842).

⁵⁴ 2 Harper & James, Torts § 18.5, at 1040-41 (1956).

⁵⁵ *Schubert v. J. R. Clark Co.*, 49 Minn. 331, 51 N.W. 1103 (1892). *Cf. Levi v. Langridge*, 2 M. & W. 519, 150 Eng. Rep. 863 (Exch. 1837), *aff'd*, 1 H. & H. 325 (1838).

⁵⁶ 2 Harper & James, Torts § 18.5, at 1040-42 (1956).

⁵⁷ 217 N.Y. 382, 111 N.E. 1050 (1916).

⁵⁸ *McNiece & Thornton*, *supra* note 49, at 1286, claim:

The whole aim of the manufacturer or supplier is to obtain economic benefit through the operation of the chain reaction represented by the manufacturer, wholesaler, retailer, and consumer. Since benefit accrues to the manufacturer or supplier through this chain, it is not an illogical corollary to require affirmative action, such as inspection, in order to safeguard the members of the chain

or is chargeable with knowledge of the risk created. Such knowledge may be acquired before or after sale of a particular product unit, but the action necessary to discharge the duty must take place, in part at least, after the sale. In spite of when the duty arises, it continues until the manufacturer has developed and made available the necessary improvements (as respondent failed to do). Thus, *Noel* is unique in that the duty of a manufacturer to continue developing his product for the protection of persons making use of those units already sold was for the first time articulated.⁵⁹

Noel results in a rather complicated concept of negligence, the operation of which may be described in general terms as follows: assuming the manufacturer knows or should know of the danger created, but the utility of his product outweighs the risk, he may design and sell the product and be excused from liability in recognition of the limitations of human knowledge and skill if he exercises care up to those limits. Although temporarily excused, he is nonetheless under a duty to use due care and a reasonable amount of his resources in developing a safety device which will reduce the risk. Once he has succeeded, he must make the device available to owners of units previously sold or be liable for injuries occurring at or after the time he should have done so. He is no longer excused from liability because the burden of improving the product no longer outweighs the probability and gravity of injury. The result is that the manufacturer escapes liability for a period, and society or the individual bears any loss occurring, but only for so long as the manufacturer is excusably limited in knowledge and skill.

As previously stated, this principle is not unmanageable; it has certain built in limitations. It would not be applicable in situations where a product was negligently designed or manufactured or where a warning effective to relieve the manufacturer of liability could be given, for the existing principles of manufacturer's liability adequately cover such cases.⁶⁰ Nor would it exist where the probability and gravity of injury if it occurred were slight.⁶¹ Rather the duty to improve a product should exist only where in spite of the risk created (unreasonable but for the limitations of knowledge and skill) society needs the product and the manufacturer's status as a skilled and knowledgeable member of the particular industry makes society in general and purchasers and users in particular dependent on him to discharge the responsibility of developing a safer product. These factors coalesced to bring liability upon respondent in *Noel*, but it is highly unlikely that they require Ford to provide power brakes for the extant Model A's.

CONCLUSION

In *Noel* the respective courts were presented with a problem somewhat unique, but one bound to become less so in this age of technological advance. Presumably, respondent's propeller system measured up to the state of the

⁵⁹ See Restatement (Second), Torts § 321 (1965), which requires an affirmative act of warning where a warning will be effective, but does not go as far as *Noel*.

⁶⁰ *Ibid.*

⁶¹ See *Pontifex v. Sears, Roebuck & Co.*, 226 F.2d 909 (4th Cir. 1955).

art at the time of design. Nothing to the contrary was shown. Assuming then that the utility of the product outweighed the risk created, liability was improperly based on principles of negligent design. The result would be the same if *Noel* were treated as a negligent sale case because no feasible safety device was known or available at either the time of design or sale. The fact remains, however, that respondent knew of the dangers involved but did not convey that information to LAV. Under some such circumstances the law requires a warning. But, in *Noel* a warning to LAV would have accomplished nothing as long as LAV could not obtain a safety device from other sources; the policy of requiring a warning to prevent an avoidable risk could not have been served. Consequently, respondent was obligated to take positive action to reduce the risk by improvement of its product. In view of the voluntary nature of the relationship between respondent and LAV's passengers, the profit such relationship was designed to give respondent and the control it had over the product market, the duty imposed in *Noel* does not seem to be an unjust burden.

This analysis places no particular emphasis on the continuing relationship between respondent and LAV which the court of appeals gave as the basis of its decision. Presumably, if this relationship, which might or might not exist in any particular case, were to be taken as the basis of liability, the rationale would have to be that of undertaking, a theory which would be much more difficult to maintain and which would not achieve the desired protection in cases where there was no continuing relationship. If the court had granted a rehearing as Judge Biggs suggested should have been done,⁶² a more adequate rationale might have been articulated. However, in spite of this deficiency, *Noel* stands as an example of the increasing demands being placed on manufacturers to exhibit a social consciousness not inspired by the profit motive.

⁶² *Noel v. United Aircraft Corp.*, 342 F.2d 232, 244 (1965) (dissent).